

Amendments to the Claims:

This listing of the claims replaces all prior versions and listing of the claims in the present application.

Listing of Claims:

1-88. (canceled)

89. (previously presented) A location system for locating a target mobile terminal, comprising:

a client terminal for transmitting a location request specifying the target mobile terminal and location information including accuracy and allowable age; and

a location network for estimating a location of the target mobile terminal in response to the location request from said client terminal,

wherein said network conducts a privacy check of the location request after said network has determined that said network stores a last known location of the target mobile terminal and the stored last known location satisfies the accuracy and allowable age in the location request, and

wherein, when a result of the privacy check is positive, said network provides the last known location in response to the location request and does not estimate the location of the target mobile terminal.

90. (previously presented) The location system of claim 89, wherein the location request specifies that a current location of the target mobile terminal is desired, and wherein said network

conducts the privacy check of the location request after said network has determined that the current location of the target mobile terminal is available, and wherein, when a result of the privacy check is positive, said network provides the current location of the target mobile terminal.

91. (previously presented) A location system for locating a target mobile terminal, comprising:

a client terminal for transmitting a location request specifying the target mobile terminal and a type of location information; and

a location network that, responsive to said location request from said client terminal,

performs a privacy check if the network stores the last known location information of the target mobile terminal and the stored last known location information satisfies a requested accuracy and a requested allowable age, and

skips location estimation processing if the result of the privacy check satisfies one or more specified conditions.

92. (previously presented) A location system for locating a target mobile terminal, comprising:

a client terminal for transmitting a location request specifying the target mobile terminal and a type of location information; and

a location network that, responsive to said location request from said client terminal,

checks whether the network stores last known location information of the target mobile terminal if the type of location information specifies last known or current location and if a requested allowable age of location information is available,

performs a privacy check if the network stores the last known location information of the target mobile terminal and the stored last known location information satisfies a requested accuracy and a requested allowable age, and

skips location estimation processing if the result of the privacy check satisfies one or more specified conditions.

93. (previously presented) The location system of claim 92, wherein the location estimation processing acquires current location information.

94. (previously presented) A gateway of a location system for locating a target mobile terminal, wherein the gateway is responsive to a location request specifying the target mobile terminal and a type of location information from a client terminal,

wherein the gateway performs a privacy check if the gateway stores the last known location information of the target mobile terminal and the stored last known location information satisfies a requested accuracy and a requested allowable age, and if the result of the privacy check satisfies one or more specified conditions, the gateway skips location estimation processing.

95. (previously presented) A gateway of a location system for locating a target mobile terminal, wherein the gateway, responsive to a location request specifying the target mobile terminal and a type of location information from a client terminal,

checks whether the gateway stores last known location information of the target mobile terminal if the type of location information specifies last known or current and if a requested allowable age of location information is available,

performs a privacy check if the gateway stores the last known location information of the target mobile terminal and the stored last known location information satisfies a requested accuracy and a requested allowable age, and

skips location estimation processing if the result of the privacy check satisfies one or more specified conditions.

96. (previously presented) The gateway of claim 94, wherein the location estimation processing acquires current location information.

97. (previously presented) A gateway of a location system for locating a target mobile terminal, wherein the gateway, responsive to a location request specifying the target mobile terminal and a type of location information from a client terminal, checks whether the network stores last known location information of the target mobile terminal and whether the stored last known location information satisfies a requested accuracy

and a requested allowable age, before or instead of acquiring current location information.

98. (previously presented) The gateway of claim 97, wherein the gateway, responsive to said location request from said client terminal, if said type of location information specifies last known location information, checking whether the network stores last known location information of the target mobile terminal and whether the stored last known location information satisfies a requested accuracy and a requested allowable age, before or instead of acquiring current location information.

99. (previously presented) The gateway of claim 97, wherein the gateway transmits said stored last known location information if the gateway stores last known location information of the target mobile terminal and the stored last known location information satisfies the requested accuracy and the requested allowable age, and acquires current location information if the gateway does not store last known location information of the target mobile terminal or the stored last known location information dose not satisfy the requested accuracy and the requested allowable age.

100. (new) A location system for locating a mobile terminal, comprising:

a client terminal for transmitting a location request specifying a target mobile terminal and accuracy and age of last known location information of the target mobile terminal; and

a location network responsive to said location request from said client terminal for determining whether said last known location information of the target mobile terminal is stored in said network, and if said last known location information is stored in said network, determining whether the stored last known location information satisfies said specified accuracy and age, either before acquiring current location information of the target mobile terminal or instead of acquiring the current location information.

101. (new) The location system of claim 100, wherein said location network transmits a copy of said stored last known location information to said client terminal if the stored last known location information satisfies said specified accuracy and age.

102. (new) The location system of claim 101, wherein said location network acquires current location information of the target mobile terminal if the last known location of the target mobile terminal is not stored in the network or the stored last known location information does not satisfy said specified accuracy and age.

103. (new) The location system of claim 100, wherein said location request contains a type of location information and wherein said location network performs said determination of whether said last known location information of the target mobile terminal is stored in said network if said type of location

information of the location request specifies last known location information.

104. (new) The location system of claim 100, wherein said location network maintains privacy profile of the target mobile terminal, uses the privacy profile to perform a privacy check on said location request and transmits said last known location information if the privacy check indicates a favorable result.

105. (new) The location system of claim 104, wherein said location network transmits a notification message to the target mobile terminal according to said privacy profile before transmitting said last known location information to said client terminal.

106. (new) The location system of claim 100, wherein said location network transmits a verification message to the target mobile terminal according to said privacy profile and transmits said last known location information to the client terminal when the location system receives a verification report from the target mobile terminal which indicates that the location request is verified by the target mobile terminal.

107. (new) The location system of claim 103, wherein said client terminal is a mobile terminal which represents one of said plurality of mobile terminals.

108. (new) The location system of claim 107, wherein said location network is responsive to said location request from one of said mobile terminals for producing current location

information of a target mobile terminal if the type of location information specifies current location information and transmitting the current location information to said one mobile terminal and storing the last known location information in a memory as last known location information of the target mobile terminal, and copying last known location information of the target mobile terminal from the memory if said type of location information specifies last known location information and transmitting the copied information to said one mobile terminal.

109. (new) The location system of claim 100, wherein said location network comprises:

a gateway including receive means for receiving a location request from a client terminal, said request specifying a target mobile terminal and a type of location information; and

a wireless network including:

a memory;

control means for receiving the location request from said gateway and producing current location information of the target mobile terminal if the type of location information of the received request specifies current location information and storing the acquired current location information in said memory as last known location information of the target mobile terminal, and reading the stored last known location information of the target mobile terminal from said memory if said type of location information specifies last known location information; and

transmit means for transmitting, to said gateway, a copy of the acquired current location information or a copy of the last known location information read from said memory, depending on said type of last known location information,

said gateway further including transmit means for repeating said copy of current location information or last known location information to said client terminal.

110. (new) The location system of claim 109, wherein said location request further contains a parameter of last known location information, and a privacy profile of said target mobile terminal is stored in said memory,

wherein said control means includes reusability check means for performing a reusability test by checking said parameter with the stored privacy profile when said type of location information specifies last known location information and reading the stored last known location information from said memory when said reusability test indicates a favorable result.

111. (new) The location system of claim 109, wherein said privacy profile indicates whether or not notification is required for notifying that the target mobile terminal is being accessed, and wherein said control means further includes notification means for transmitting a notification message to said target mobile terminal prior to the transmission of said last known location information to said client terminal if said privacy profile of said target mobile terminal requires notification.

112. (new) The location system of claim 109, wherein said privacy profile indicates whether or not the location request is verified by the target mobile terminal, and wherein said control means further includes verification means for transmitting a verification message to said target mobile terminal and receiving a verification report from the target mobile terminal prior to the transmission of said last known location information to said gateway if said privacy profile of said target mobile terminal indicates that verification by the target mobile terminal is required, and transmitting said copy of last known location information to said gateway if said verification report indicates a favorable result.

113. (new) A location system comprising:

a client terminal (101) for transmitting a location request specifying a target mobile terminal, a type of location information, and a parameter of last known location information;

a gateway (102) for storing last known location information of home mobile terminals and privacy profiles of the mobile terminals; and

a plurality of wireless networks (103, 104) for establishing a wireless link to mobile terminals,

said gateway (102) being responsive to said location request for performing a reusability test by checking said parameter of last known location information with the privacy profile of the target mobile terminal if said type of location information

specifies last known location information, acquiring a node identifier from an associated register and current location information of the target mobile terminal from one of said wireless networks specified by said node identifier if said reusability test indicates an unfavorable result, transmitting the current location information from the gateway to the client terminal, and storing the current location information in a memory as last known location information of said target mobile terminal,

said gateway transmitting a copy of last known location information of the target mobile terminal to the client terminal if said reusability test indicates a favorable result.

114. (new) A location system comprising:

a client terminal (101) for transmitting a location request specifying a target mobile terminal, a type of location information, and a parameter of last known location information;

a gateway (102);

a register (106); and

a plurality of wireless networks (103, 104) for establishing a wireless link to mobile terminals and storing privacy profiles and location information of said mobile terminals,

said gateway (102) being responsive to said location request for (a) acquiring a node identifier from said register (106) if said type of location information specifies last known location information, (b) authorizing one of a plurality of wireless

networks specified by the node identifier to perform a reusability test by checking said parameter with the privacy profile of the target mobile terminal, (c) acquiring current location information of the target mobile terminal from said one wireless network, and storing the current location information in a memory, and (d) acquiring a copy of the last known location information of the target mobile terminal from said one wireless network if said reusability test indicates a favorable result or a copy of the current location information if said reusability test indicates an unfavorable result and transmitting the copy of the last known location information or current location information to said client terminal.

115. (new) The location system of claim 113, further comprising a second gateway (112) which, when visited by said target mobile terminal, operates as a repeater node between said one wireless network (113, 114) and said first gateway (102) for repeating said current location information.

116. (new) A location system comprising:

a client terminal (101) for transmitting a location request specifying a target mobile terminal, a type of location information, and a parameter of last known location information;

a gateway (102);

a privacy profile register (107) for storing privacy profiles and location information of mobile terminals;

a home location register (106); and

a wireless network (103, 104) for establishing a wireless link to said mobile terminals,

said gateway being responsive to said location request for (a) authorizing said privacy profile register to perform a reusability test by checking said parameter with the privacy profile of the target mobile terminal if said type specifies last known location information, (b) receiving a report of said reusability test from said privacy profile register, (c) acquiring a node identifier from said home location register and current location information of the target mobile terminal from one of a plurality of wireless networks specified by said node identifier if said report indicates that said reusability test indicates an unfavorable result, (d) transmitting the current location information from the gateway to the client terminal, (e) storing the current location information in a memory of said privacy profile register as last known location information of said target mobile terminal, and (f) transmitting a copy of last known location information of the target mobile terminal to the client terminal if said report indicates that said reusability test indicates a favorable result.

117. (new) A location system comprising:

a client terminal (101) for transmitting a location request specifying a target mobile terminal and a type of location information;

a gateway (102) for storing last known location information of home mobile terminals;

a home location register (106);

a privacy profile register (107) for storing privacy profiles of the mobile terminals; and

a plurality of wireless networks (103, 104) for establishing a wireless link to mobile terminals,

said gateway being responsive to said location request for (a) authorizing said privacy profile register to perform a privacy check with the privacy profile of the target mobile terminal if said type of location information specifies last known location information, (b) receiving a report of the privacy check from said privacy profile register, (c) acquiring a node identifier from said home location register and current location information of the target mobile terminal from one of said wireless networks specified by said node identifier if said report indicates that said privacy check indicates an unfavorable result, (d) transmitting the current location information from the gateway to the client terminal, (e) storing the current location information in a memory as last known location information of said target mobile terminal, and (f) transmitting a copy of last known location information of the target mobile terminal to the client terminal if said report indicates that said privacy check indicates a favorable result.

118. (new) The location system of claim 116, further comprising a second gateway (112) which, when visited by said target mobile terminal, operates as a repeater node between said first gateway (102) and said one wireless network (113, 114) for repeating said current location information.

119. (new) The location system of claim 117, further comprising a second gateway (112) which, when visited by said target mobile terminal, operates as a repeater node between said first gateway (102) and said one wireless network (113, 114) for repeating said current location information.

120. (new) A location method comprising the steps of:

a) transmitting a location request from a client terminal, said request specifying a target mobile terminal and accuracy and age of last known location information of the target mobile terminal;

b) receiving the location request at a location network; and

c) determining whether said last known location information of the target mobile terminal is stored in said network, and if said last known location information is stored in said network, and determining whether the stored last known location information satisfies said specific accuracy and age, either before acquiring current location information of the target mobile terminal or instead of acquiring the current location information.

121. (new) The location method of claim 120, further comprising transmitting a copy of said stored last known location information to said client terminal if the stored last known location information satisfies said specified accuracy and age.

122. (new) The location method of claim 121, further comprising acquiring current location information of the target mobile terminal if the last known location of the target mobile terminal is not stored in the network or the stored last known location information does not satisfy said specified accuracy and age.

123. (new) The location method of claim 121, wherein said location request contains a type of location information, and wherein step (c) is performed if said type of location information specifies last known location information.

124. (new) The location method of claim 121, wherein said location request contains a specified accuracy and age of last known location information, and wherein step (e) comprises the steps of:

performing a reusability test on last known location information of the target mobile terminal by using said specified accuracy and age;

producing current location information of the target mobile terminal and transmitting the current location information from the location network to said client terminal if the type of location information of the received request specifies current

location information if said reusability test indicates that the stored last known information fails to meet the requested age; and

storing the current location information in said memory as last known location information of the target mobile terminal.

125. (new) The location method of claim 120, wherein said location network maintains privacy profile of the target mobile terminal, and wherein step (e) comprises the steps of transmitting a notification message to the target mobile terminal according to said privacy profile, before transmitting said last known location information to the client terminal.

126. (new) The location method of claim 120, wherein said location network maintains privacy profile of the target mobile terminal, further comprising transmitting a verification message to the target mobile terminal according to said privacy profile and transmitting said last known location information if a verification report from the target mobile terminal indicates that the location request is verified by the target mobile terminal.

127. (new) The location method of claim 123, wherein said location network products and transmits current location information of said target mobile terminal to said client terminal if the stored location information of the target mobile terminal is not available and said type of location information

indicates that current location information can be used instead of last known location information.

128. (new) The location method of claim 120, wherein said client terminal is a mobile terminal which represents one of said plurality of mobile terminals.

129. (new) The location method of claim 120, further comprising the steps of:

transmitting a location request from one of said mobile terminals, said request specifying a target mobile terminal and a type of location information;

receiving said location request at said location network;

producing current location information of a target mobile terminal and transmitting the current location information from said location network to said one mobile terminal if the type of location information specifies current location information;

storing the current location information in a memory as last known location information of the target mobile terminal; and

copying the last known location information of the target mobile terminal from said memory if said type of location information specifies last known location information and transmitting the copied information from said location network to said one mobile terminal.

130. (new) The location method of claim 120, wherein step (b) comprises the steps of performing a privacy check of the

location request and performing step (c) if said privacy check indicates a favorable result.